SEQUENCE LISTING

<110> SPECHT, THOMAS
        HINZMANN, BERND
        SCHMITT, ARMIN
        PILARSKY, CHRISTIAN
        DAHL, EDGAR
        ROSENTHAL, ANDRE

<120> HUMAN NUCLEIC ACID SEQUENCES FROM HYSTEROMYOMIC TISSUE

<130> ALBRE 4

<140> 09/673,400
<141> 2000-10-17

<150> PCT/DE99/01178
<151> 1999-04-14

<160> 57

<170> PatentIn Ver. 2.1

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<213> Homo sapiens


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<210> 12
<211> 1769
<212> DNA
<213> Homo sapiens

<400> 12
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<210> 13

<211> 1026
<212> DNA
<213> Homo sapiens

<400> 13
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aaaaaa 1026

<210> 14
<211> 676
<212> DNA
<213> Homo sapiens

<400> 14
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tccccttctt gggcagcaag gcgaacccca tccctactca ctggagctca gctttgattt 180
ttaacctccc ttccccaccc ttccagaaca cacacattcc attccaaaac tgatttttata 240
aagacatttt aaacataatg atgcaacttg gtgtgcacta cagcaaatgt acaggtgttt 300
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<210> 15
<211> 1254
<212> DNA
<213> Homo sapiens

<400> 15
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ttccagaagt taatcatttg aattctgaac actggagaaa aaccgaaaaa tggacggggc 180
atgaagagac taatcatctg gaaccgatt tcagtggcga tggcatgaca gagctagagc 240
tcgggcccag ccccaggctg cagcccattc gcaggcaccc gaaagaactt ccccagtatg 300
gtggtcctgg aaaggacatt tttgaagatc aactatatct tcctgtgcat tccgatggaa 360
tttcagttca tcagatgttc accatggcca ccgcagaaca ccgaagtaat tccagcatag 420

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<211> 537
<212> DNA
<213> Homo sapiens

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cctgctcaat gattaccggg gctttctggc cgagatgaag cgagtctttg gatgggagga 420
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<210> 17
<211> 823
<212> DNA
<213> Homo sapiens

<400> 17
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tccttaaggg cctggcgcac ataaggtgtg accttttcat tcccgttgtt atggagggcc 180
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<211> 1082
<212> DNA
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<213> Homo sapiens

<400> 18
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cgagagaact ggtcgctgaa acctctacaa cttagttgac cgtaactgcc agagccctgc 180
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<210> 19
<211> 1548
<212> DNA
<213> Homo sapiens

<400> 19
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tgaagaagct gcatataaac cacaacaacc tgacagagtc tgtgggccca cttcccaaat 720
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gttttgtaaa catttatttt tttttaaagg aaaaggatgg aaaggccagg gcctaatttc 1500
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11

<210> 20
<211> 844
<212> DNA
<213> Homo sapiens

<400> 20
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cttgcagcag gaacccactt aggtggcacc aatcttgact tccagatgga acagtacatc 180
tataaaagga aaagtgatgg catctatatc ataaatctca agaggacctg ggagaagctt 240
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ccacggcttc ttgtggttac tgaccccagg gctgaccacc agcctctcac ggaggcatct 480
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ctctagaaaa aacattcctg tgcacattgt tagagcttgg agttgaggct actgactggc 660
cgatgaactc gcaagtgtag gtagtgtgct acatgagggg caagttttcg ctaacaccac 720
aagggtctct ggcccaatga gtggagtttg atagtaattc ttgctacaag tataacatta 780
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tcca 844

<210> 21
<211> 862
<212> DNA
<213> Homo sapiens

<400> 21
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ggtgagagag gcggggggcct cgggagggtg aaaggggggga ggagaagggc ggggcacgga 180
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tccacctacg gaagcgggag tgagcgcccc gcctcgctcg gctgcccccg cccctttcccg 780
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aaaaaggaag gaaaaaaaaa aa 862

<210> 22
<211> 546
<212> DNA
<213> Homo sapiens

<400> 22
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gagacctctg ccgcaaacat gctccgccag atcatcggtc aggccaagaa gcatccgagc 180
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cgtctggcat tgttcaatcc agatgtttgt tgggacagaa ataacccaga gccctggaac 300
aaactgggtc ccaatgatca atacaagttc tactcagtga atgtggatta cagcaagctg 360

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aaatgaatga aatcaatggt ggggggcgct attggaagcc ctattggggt tcaagtgttg 540
aataaa                                                           546
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<210> 23
<211> 1591
<212> DNA
<213> Homo sapiens

<400> 23
gccgaggagc cgagcccgcc accccccgc ccgcccgccg ccgccatggg ctgcctcggg 60
aacagtaaga ccgaggacca gcgcaacgag gagaaggcgc aggtgaggcc aacaaaaaga 120
tcgagaagca gctgcagaag gacaagcagg tctaccgggc cacgcaccgc ctgctgctgc 180
tgggtgctgg agaatctggt aaaagcacca ttgtgaagca gatgaggatc ctgcatgtta 240
atgggtttaa tggagacagt gagaaggcaa ccaaagtgca ggacatcaaa aacaacctga 300
aagaggcgat tgaaaccatt gtggccgcca tgagcaacct ggtgcccccc gtggagctgg 360
ccaaccccga gaaccagttc agagtggact acattctgag tgtgatgaac gtgcctgact 420
ttgacttccc tcccgaattc tatgagcatg ccaaggctct gtgggaggat gaaggagtgc 480
gtgcctgcta cgaacgctcc aacgagtacc agctgattga ctgtgcccag tacttcctgg 540
acaagatcga cgtgatcaag caggctgact atgtgccgag cgatcaggac ctgcttcgct 600
gccgtgtcct gacttctgga atctttgaga ccaagttcca ggtggacaaa gtcaacttcc 660
acatgtttga cgtgggtggc cagcgcgatg aacgccgcaa gtggatccag tgcttcaacg 720
atgtgactgc catcatcttc gtggtggcca gcagcagcta acatggtc atccgggagg 780
acaaccagac caaccgcctg caggaggctc tgaacctctt caagagcatc tggaacaaca 840
gatggctgcg caccatctct gtgatcctgt tcctcaacaa gcaagatctg ctcgctgaga 900
aagtccttgc tgggaaatcg aagattgagg actactttcc agaatttgct cgctacacta 960
ctcctgagga tgctactccc gagcccggag aggacccacg cgtgacccgg gccaagtact 1020
tcattcgaga tgagtttctg aggatcagca ctgccagtgg agatgggcgt cactactgct 1080
accctcattt cacctgcgct gtggacactg agaacatccg ccgtgtgttc aacgactgcc 1140
gtgacatcat tcagcgcatg caccttcgtc agtacgagct gctctaagaa gggaaccccc 1200
aaatttaatt aaagccttaa gcacaattaa ttaaaagtga aacgtaattg tacaagcagt 1260
taatcaccca ccatagggca tgattaacaa agcaaccttt cccttccccc gagtgatttt 1320
gcgaaacccc ctttccctt cagcttgctt agatgttcca aatttagaaa gcttaaggcg 1380
gcctacagaa aaaggaaaaa aggccacaaa agttccctct cactttcagt aaaaataaat 1440
aaaacagcag cagcaaacaa ataaaatgaa ataaaagaaa caaatgaaat aaatattgtg 1500
ttgtgcagca ttaaaaaaaa tcaaaataaa aattaaatgt gagcaaagga aaaaaaaaa 1560
ggcaaaaggg gaaagaagaa aagggggggg g                               1591
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<210> 24
<211> 441
<212> DNA
<213> Homo sapiens

<400> 24
ggcaggcaga tacgttcgtc agcttgctcc tttctgcccg tggacgccgc cgaagaagca 60
tcgttaaagt ctctcttcac cctgccgtca tgtctaagtc agagtctcct aaagagcccg 120
aacagctgag gaagctcttc attggagggt tgagctttga aacaactgat gagagcctga 180
ggagccattt tgagcaatgg ggaacgctca cggactgtgt ggtaatgaga gatccaaaca 240
ccaagcgctc caggggcttt gggtttgtca catatgccac tgtggaggag gtggatgcag 300
ctatgaatgc aaggccacac aaggtggatg gaagagttgt ggaaccaaag agagctgttt 360
cagagaagat ttgaaaagcc aggtgccact tacctgtgaa aaggtatttg ttggtggatt 420
aaggagcact tgagacatca c                                           441
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```
<210> 25
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<211> 1131
<212> DNA
<213> Homo sapiens

<400> 25
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cgggaggtga aatccggttc taaccggtcc ggggctccca gcgctataaa aactttataa 60
accccccgga gcccgagcag tgtgaagaag aggcgagaac gaccccggga ccgaccaaag 120
cccgcgcgcc gctgcatccc gcgtccagca cctacgtccc gctgccgtcg ccgccgccac 180
catgcccaag agaaaggctg aaggggatgc taagggagat aaagcaaagg tgaaggacga 240
accacagaga agatccgcga ggttgtctgc taaacctgct cctccaaagc cagagcccaa 300
gcctaaaaag gcccctgcaa agaagggaga gaaggtaccc aaagggaaaa agggaaaagc 360
tgatgctggc aaggagggga ataaccctgc agaaaatgga gatgccaaaa cagaccaggc 420
acagaaagct gaaggtgctg gagatgccaa gtgaagtgtg tgcatttttg ataactgtgt 480
acttctggtg actgtacagt ttgaaatact attttttatc aagtttttata aaaatgcaga 540
attttgtttt acttttttttt tttttttaaa agctatgttg ttagcacaca gaacacttca 600
ttgttgtttt tgggggaagg ggcatatgtc actaatagaa tgtctccaaa gctggattga 660
tgtggagaaa acacctttcc cttctagttt tgagagactt cctcttggct cccaggagga 720
gggattccct gactttgaca cacatggcca ccttggcaca aaagccttgt ggtatagaaa 780
aacaaatttg tttttatgtc ctcttctccc tttccatctt tcagcataga cttaactccc 840
ttaagcccag acatctgttg agacctgacc cctagtcatt ggttaccagt gtgtcaggca 900
atctggactt ccagtgatg ccactgagat ggcacctgtc aaaagagcag tggttccatt 960
tctagattgt ggatcttcag ataaattctg ccattttcat ttcacttcct gaaagtcagg 1020
gtcggcttgt gaaaagttgt taaacaacat gctaaatgtg aaatgtcaac cctcactcta 1080
aaacttttcc ctgggtcaga ggatccgatg gaggacttca attgggggtt t 1131
```

<210> 26
<211> 1071
<212> DNA
<213> Homo sapiens

<400> 26
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gtaccctcaa agacagagac accaagaaga atcggaacat acaggctttg atatcaaagg 60
tttataaagc caatatctgg gaaagagaaa accgtgagac ttccagatct tctctggtga 120
agtgttgttt cctgcaacga tcacgaacat gaacatcaaa ggatcgccat ggaaagggtc 180
cctcctgctg ctgctggtgt caaacctgct cctgtgccag agcgtggccc ccttgcccat 240
ctgtcccggc ggggctgccc gatgccaggt gacccttcga gacctgtttg accgcgccgt 300
cgtcctgtcc cactacatcc ataacctctc ctcagaaatg ttcagcgaat tcgataaacg 360
gtatacccat ggccgggggt tcattaccaa ggccatcaac agctgccaca cttcttccct 420
tgccaccccc gaagacaagg agcaagccca acagatgaat caaaaagact ttctgagcct 480
gatagtcagc atattgcgat cctggaatga gcctctgtat catctggtca cggaagtacg 540
tggtatgcaa gaagccccgg aggctatcct atccaaagct gtagagattg aggagcaaac 600
caaacggctt ctagagggca tggagctgat agtcagccag gttcatcctg aaaccaaaga 660
aaatgagatc taccctgtct ggtcgggact tccatccctg cagatggctg atgaagagtc 720
tcgcctttct gcttattata acctgctcca ctgcctacgc agggattcac ataaaatcga 780
caattatctc aagtcctga agtgccgaat catccacaac aacaactgct aagcccacat 840
ccatttcatc tatttctgag aaggtcctta atgatccgtt ccattgcaag cttctttttag 900
ttgtatctct tttgaatcca tgcttgggtg taacaggtct cctcttaaaa aataaaaact 960
gactccttag agacatcaaa atctaaaaaa acttaatggg ccggcgcag tggctcatgg 1020
ctgtggtccc ggcactttgg gaggccgagg caggcggatc aggaggtcag g 1071
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<210> 27
<211> 896
<212> DNA
<213> Homo sapiens

<400> 27

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gtgaccggct cagaccggtt ctggagacaa aaggggccgc ggcggccgga gcgggacggg 60
cccggcgcgg gagggagcga agagcgcggg cagcgagcga gatgcagcac cgaggcttcc 120
tcctcctcac cctcctcgcc ctgctggcgc tcacctccgc ggtcgccaaa aagaaagata 180
aggtgaagaa gggcggcccg gggagcgagt gcgctgagtg ggcctggggg ccctgcaccc 240
ccagcagcaa ggattgcggc gtgggtttcc gcgagggcac ctgcggggcc cagacccagc 300
gcatccggtg cagggtgccc tgcaactgga agaaggagtt tggagccgac tgcaagtaca 360
agtttgagaa ctggggtgcg tgtgatgggg gcacaggcac caaagtccgc caaggcaccc 420
tgaagaaggc gcgctacaat gctcagtgcc aggagaccat ccgcgtcacc aagccctgca 480
cccccaagac caaagcaaag gccaaagcca agaaagggaa gggaaaggac tagacgccaa 540
gcctggatgc caaggagccc ctggtgtcac atggggcctg gcccacgccc tccctctccc 600
aggcccgaga tgtgacccac cagtgccttc tgtctgctcg ttagctttaa tcaatcatgc 660
cctgccttgt ccctctcact ccccagcccc acccctaagt gcccaaagtg gggagggaca 720
agggattctg ggaagcttga gcctccccca aagcaatgtg agtcccagag cccgcttttg 780
ttcttcccca caattccatt actaagaaac acatcaaata aactgacttt ttcccccccaa 840
aaaaagctct tctttttttaa tataaaaaaa aaaaaaaaaa aaaaaaaaaa aagaaa 896
```

```
<210> 28
<211> 1050
<212> DNA
<213> Homo sapiens
```

```
<400> 28
ttttcatttt tttttttttt tttttctcag ttcaagttta atacaaacta caaaagatta 60
atgggttgct ctactaatac atcatacaaa ccagtagcct gcccacaacg ccaactcagg 120
ccattcctac caaaggaaga aaggctggtc tctccacccc ctgtaggaaa ggcctgcctt 180
gtaagacacc acaattcggc tgaatctgaa gtcttgtgtt ttactaatgg aaaaaaaaaa 240
tacagaagag gttttgttct catggctgcc caccgcagcc tggcactaaa acagcccagc 300
gctcacttct gcttggagaa atattctttg ctcttttgga catcaggctt gatggtatca 360
ctgccaggtt tccagccagc tgggcacact tccccatgtt tgtcagtgaa ctggaaggcc 420
tgaactagtc tcaaagtctc atccacagag cggccaacag ggaggtcatt tacagtgatc 480
tgccgaagaa tacccttatc atcaatgata aaaaggcccc tgaacgagat gccttcatca 540
gcctttaaga cccccataatc ctgagcaatg gtgcgcttcg ggtctgatac caaaggaatg 600
ttcatgggtc ccagtcctcc ttgtttctta ggtgtattga cccatgctag atgacagaag 660
tgagaatcca cagaagcacc aatcacttgg cagttgagtt tcttaaattc ttctgcccta 720
tcactgaaag caatgatctc cgtggggcac acaaaggtga agtcaagagg gtaaaagaag 780
aacacaacat attttccttt gtagtcagac aggctgatat ctttaaactg accatctggc 840
ataacagctg tggctttgaa gttggggggca gggtgcccaa ttttagcatt tcctgaagac 900
atcttcctat cagcagtccc aacacaagtc gcagaaacta accaccgaca ccaggcaaga 960
acaagacgcg caagagctct ccggggcgct gcctttatag ccagtaggga tctcgccaca 1020
gtcggaacgg acgggggtgc cggagtagga 1050
```

```
<210> 29
<211> 581
<212> DNA
<213> Homo sapiens
```

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<400> 29
caggcttcct tctggcaaca ggcgtgggtc acgctctcgc tcggtctttc tgccgccatc 60
ttggttccgc gttccctgca caaaatgccc ggcgaacacc agaaaccgtc cctgctacag 120
agcaggagtt gccgcagccc caggctgaga cagggtctgg aacagaatct gacagtgatg 180
aatcagtacc agagcttgaa gaacaggatt ccacccaggc aaccacacaa caagcccagc 240
tggcggcagc agctgaaatc gatgaagaac cagtcagtaa agcaaaacag agtcggagtg 300
aaaagaaggc acggaaggct atgtccaaac tgggtcttcg gcaggttaca ggagttacta 360
gagtcactat ccggaaatct aagaatatcc tctttgtcat cacaaaacca gttgtctaca 420
agagccctgc ttcagatacg tacatagttt ttggggaagc cagatcgaag attatcccag 480
caagcacaac tagcagctgc tgagaagtca agttcaggtg aactgtctca acgttcagga 540
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aacccccggc ttccactgta gaggggagt aaggggaggg t   581

<210> 30
<211> 264
<212> DNA
<213> Homo sapiens

<400> 30
gggactatgt tgtgagcctg cgaaagaagt ttgtgtgggg actgtgggca gtgaatgcgt 60
tgggaacaat atggaaaact gggagctgcc ctcagtttct ccccaagttg gactcacttt 120
cggggtgtcc caaaagcctg attccagggc ctgctagccc gaccccggtg acgcctccac 180
ccgcgcctgg ccccagcctt cacccgcgat cgccgccctc cggggcacac cctccgccag 240
aaaacagccg gcgggcggcg agac   264

<210> 31
<211> 111
<212> DNA
<213> Homo sapiens

<400> 31
cggcgaatca cttataaatg gcgccgaagc aggagcccga aggctaaatt gcaggagggg 60
tgagcgaatg ctgtgctttc atgggcctct tacgttgatg aggcaaagta t   111

<210> 32
<211> 76
<212> PRT
<213> Homo sapiens

<400> 32
Pro Phe Cys Glu Glu Thr Lys Thr Glu Arg Leu Trp Pro Arg Cys Arg
 1   5   10   15

Pro Pro Ala Ala Val Gly Phe Ser Thr Gln Asn Pro Gly Val Gly Asp
                20   25   30

Ser Glu Ser Asn Leu Phe Ser Leu Pro Phe Leu Gly Ser Lys Ala Asn
        35   40   45

Pro Ile Pro Thr His Trp Ser Ser Ala Leu Ile Phe Asn Leu Pro Ser
    50   55   60

Pro Pro Phe Gln Asn Thr His Ile Pro Phe Gln Asn
 65   70   75

<210> 33
<211> 72
<212> PRT
<213> Homo sapiens

<400> 33
Ser Ser Phe Leu Phe Ser Phe Gln Thr Gln Phe His Lys Asn Arg Lys
 1   5   10   15

Asp Lys Val Phe Ser Ser Arg Gln Ala Lys Pro Phe Pro His His Gln
        20   25   30

Ser Ile Leu Lys Ile His Glu Glu Val Glu Arg Ser Val Ser Gly Arg
        35   40   45

Leu Lys Gly Ser Ser Ser Ser Asn Pro Thr Ala Ala Glu Lys Ile Glu
    50   55   60

Ile Glu Ile Leu Lys Ile Thr Ser
65   70

<210> 34
<211> 70
<212> PRT
<213> Homo sapiens

<400> 34
Lys Lys Leu Asp Tyr Phe Cys Ala Glu Ile Lys Asn Ser His Cys Lys
    1   5   10   15

Thr Lys Ile Lys Ile Ala Gln Ile Arg Lys Pro Gly Gly Ala Lys Cys
        20   25   30

Gln Val Ser Lys Val His Phe Phe Ser Leu Ser Lys Arg Ser Ser Thr
        35   40   45

Lys Thr Ala Arg Ile Lys Phe Ser Val Ala Asp Lys Gln Ser Pro Phe
    50   55   60

His Ile Ile Asn Gln Ser
65   70

<210> 35
<211> 60
<212> PRT
<213> Homo sapiens

<400> 35
Ser Ser Gly Pro Ala Pro Gly Cys Ser Pro Phe Ala Gly Thr Arg Lys
    1   5   10   15

Asn Phe Pro Ser Met Val Val Leu Glu Arg Thr Phe Leu Lys Ile Asn
            20   25   30

Tyr Ile Phe Leu Cys Ile Pro Met Glu Phe Gln Phe Ile Arg Cys Ser
        35   40   45

Pro Trp Pro Pro Gln Asn Thr Glu Val Ile Pro Ala
    50   55   60

<210> 36
<211> 63
<212> PRT
<213> Homo sapiens

<400> 36
Ala Ser Gly Val His Thr Glu Thr His Arg Tyr Asn Leu Leu Ser Ala
1   5   10   15

Lys Ser Arg Lys Lys Gly Trp Gly Tyr Leu Gly Trp Leu Gly Phe Asp
            20   25   30

Phe Leu Leu Val Cys Leu Phe Cys Thr Lys Thr Val Leu Ser Phe Glu
            35   40   45

Tyr Arg Arg Asp Ile Ser Ile Tyr Met Leu Ser Asn Gln Asp Gly
        50   55   60

<210> 37
<211> 170
<212> PRT
<213> Homo sapiens

<400> 37
Ala Arg Ala Ala Arg Ala Ala Gln Thr Pro His Leu Thr Leu Pro Ala
1   5   10   15

Asp Leu Gln Thr Leu His Leu Asn Arg Pro Thr Leu Ser Pro Glu Ser
            20   25   30

Lys Leu Glu Trp Asn Asn Asp Ile Pro Glu Val Asn His Leu Asn Ser
            35   40   45

Glu His Trp Arg Lys Thr Glu Lys Trp Thr Gly His Glu Glu Thr Asn
        50   55   60

His Leu Glu Thr Asp Phe Ser Gly Asp Gly Met Thr Glu Leu Glu Leu
65   70   75   80

Gly Pro Ser Pro Arg Leu Gln Pro Ile Arg Arg His Pro Lys Glu Leu
            85   90   95

Pro Gln Tyr Gly Gly Pro Gly Lys Asp Ile Phe Glu Asp Gln Leu Tyr
            100   105   110

Leu Pro Val His Ser Asp Gly Ile Ser Val His Gln Met Phe Thr Met
        115   120   125

Ala Thr Ala Glu His Arg Ser Asn Ser Ser Ile Ala Gly Lys Met Leu
        130   135   140

Thr Lys Val Glu Lys Asn His Glu Lys Glu Lys Ser Gln His Leu Glu
145   150   155   160

Gly Ser Ala Ser Ser Ser Leu Ser Ser Asp
            165   170

<210> 38
<211> 144
<212> PRT

<213> Homo sapiens

<400> 38
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Ala Arg Ala Pro Thr Leu Asp Met Arg Phe Arg Arg Arg Leu Ser Ala
1               5                   10                  15

Asp Pro His Ala Thr Gln Arg Asn Ser Ala Glu Ala Arg Gly Thr Met
            20                  25                  30

Asp Gly Arg Val Gln Leu Met Lys Ala Leu Leu Ala Gly Pro Leu Arg
            35                  40                  45

Pro Ala Ala Arg Arg Trp Arg Asn Pro Ile Pro Phe Pro Glu Thr Phe
        50                  55                  60

Asp Gly Asp Thr Asp Arg Leu Pro Glu Phe Ile Val Gln Thr Cys Ser
65                  70                  75                  80

Tyr Met Phe Val Asp Glu Asn Thr Phe Ser Asn Asp Ala Leu Lys Val
                85                  90                  95

Thr Phe Leu Ile Thr Arg Leu Thr Gly Pro Ala Leu Gln Trp Val Ile
            100                 105                 110

Pro Tyr Ile Arg Lys Glu Ser Pro Leu Leu Asn Asp Tyr Arg Gly Phe
            115                 120                 125

Leu Ala Glu Met Lys Arg Val Phe Gly Trp Glu Glu Asp Glu Asp Phe
    130                 135                 140
```

<210> 39
<211> 178
<212> PRT
<213> Homo sapiens

<400> 39
```
His Ser Leu Gly Arg Ala Pro Val Glu Thr Leu Ala Val Ala Thr Gly
1               5                   10                  15

Thr Ala Asn Ser Ser Gln Ser Thr Arg Pro Gln Ala Arg Gly Ser Pro
            20                  25                  30

Gly Leu Glu Val Leu Val Leu Leu Pro Ser Lys Asp Ser Leu His Leu
        35                  40                  45

Gly Gln Lys Ala Pro Val Ile Ile Glu Gln Gly Ala Leu Leu Pro Asp
    50                  55                  60

Val Gly Asp His Pro Leu Gln Gly Trp Pro Arg Glu Ala Gly Asp Glu
65                  70                  75                  80

Glu Arg His Leu Gln Gly Val Val Gly Glu Arg Val Leu Val His Glu
                85                  90                  95

His Val Gly Ala Arg Leu His Asp Glu Leu Arg Glu Ser Val Gly Ile
            100                 105                 110
```

Ser Val Lys Arg Leu Gly Lys Gly Asn Arg Val Pro Pro Ala Thr Arg
        115   120   125

Arg Gly Pro Glu Gly Pro Gly Gln Glu Gly Leu His Gln Leu His Pro
        130   135   140

Thr Val His Arg Ala Ala Arg Leu Arg Gly Val Ser Leu Gly Cys Val
145   150   155   160

Gly Val Ser Ala Lys Ala Ser Pro Glu Ala His Val Glu Gly Gly Gly
                165   170   175

Pro Gly

<210> 40
<211> 89
<212> PRT
<213> Homo sapiens

<400> 40
Lys Leu Thr Gly Ile Asn Thr Gly Cys Arg Asn Met Leu Ala Leu Cys
  1   5   10   15

Ile Arg Gly His Ala Gln Gln Ile Gln Glu Ile Tyr Leu Ala Thr Phe
            20   25   30

Ser Arg Lys Gly Thr Leu Gly Ile Ile His Tyr Ile Leu Glu Val Phe
        35   40   45

Leu Gly Phe Phe Phe Phe Phe Leu Arg Gln Ser Cys Cys Ile Ala Gln
    50   55   60

Ala Gly Ser Val Val Ala Gln Ser Gln Leu Ile Ala Ser Ser Ile Thr
 65   70   75   80

Gln Gly Leu Ser Asn Pro Pro Thr Leu
                85

<210> 41
<211> 95
<212> PRT
<213> Homo sapiens

<400> 41
Ile Val Thr Trp Arg Lys Val Pro Met Ser Leu Cys Gln Arg Pro Pro
  1   5   10   15

Pro Phe Val Arg Ile Gly Ile Phe Arg Leu Leu Lys Gly Leu Ala His
            20   25   30

Ile Arg Cys Asp Leu Phe Ile Pro Val Val Met Glu Gly His Ile Cys
        35   40   45

Gln Ser Leu Glu Ser Ala Lys Ala Gly Thr Arg Phe Pro Gly Pro Gln
    50   55   60

```
Trp Gly Cys Ala Asn Pro Arg Glu Leu Gly Cys Lys Phe Val Lys Asn
 65                  70                  75                      80

Gln His His Val Trp Gln Leu Ser Ile Gly Ala Arg Ser Leu Pro
                85                  90                      95
```

<210> 42
<211> 154
<212> PRT
<213> Homo sapiens

<400> 42
```
Cys Gln Leu Val Phe Arg Ile Gln Thr Asp Gly Ser Tyr Trp Ser Leu
 1               5                   10                  15

Gly Leu Thr Ser Ser Gly Asn Ile Thr Phe Ser Trp Ala Glu Met Leu
            20                  25                  30

Leu Pro Ala Leu Lys Gln His Ser Val Leu Lys Thr Ser Trp Gln Ala
        35                  40                  45

Pro Gly Ser Asn Thr Gln Leu Pro Asn Met Met Leu Ile Leu His Glu
    50                  55                  60

Phe Ala Thr Gln Phe Ser Arg Val Cys Thr Pro Pro Leu Trp Ala Gly
 65              70                  75                      80

Glu Pro Gly Pro Gly Leu Arg Arg Leu Gln Ala Leu Ala Asp Val Ala
                85                  90                  95

Leu His Asn Asn Gly Asn Glu Lys Val Thr Pro Tyr Val Arg Gln Ala
            100                 105                 110

Leu Lys Glu Ser Glu Tyr Pro Asn Pro His Lys Arg Arg Gly Thr Leu
        115                 120                 125

Ala Lys Thr His Gly Asn Phe Pro Pro Ser Asn Asp Leu Asp Arg Arg
    130                 135                 140

Ala Thr Gln Asp Ser Pro Ser Cys Ser Val
145                 150
```

<210> 43
<211> 79
<212> PRT
<213> Homo sapiens

<400> 43
```
Leu Ala Ser Thr Leu Gly Val Glu Thr Cys Leu Pro Tyr Val Ser Glu
 1               5                   10                  15

Asp Met Leu Ser Arg Ser Lys Arg Tyr Ile Trp Gln Leu Phe Leu Glu
            20                  25                  30
```

Lys Ala His Trp Val Ser Phe Ile Thr Phe Leu Ser Phe Phe Gly Phe
     35   40   45

Phe Phe Phe Phe Phe Glu Thr Val Leu Leu Tyr Cys Pro Gly Trp Ser
     50   55   60

Val Val Ala Gln Ser Gln Leu Ile Ala Ser Ser Ile Thr Gln Ala
65   70   75

<210> 44
<211> 82
<212> PRT
<213> Homo sapiens

<400> 44
Cys Gln Leu Val Phe Arg Ile Gln Thr Asp Gly Ser Tyr Trp Ser Leu
1   5   10   15

Gly Leu Thr Ser Ser Gly Asn Ile Thr Phe Ser Trp Ala Glu Met Leu
        20   25   30

Leu Pro Ala Leu Lys Gln His Ser Val Leu Lys Thr Ser Trp Gln Ala
     35   40   45

Pro Gly Ser Asn Thr Gln Leu Pro Asn Met Met Leu Ile Leu His Glu
     50   55   60

Phe Ala Thr Ser Trp Leu Pro Arg Leu Gln His Ser Ala Val Gly Thr
65   70   75   80

Gln Ser

<210> 45
<211> 68
<212> PRT
<213> Homo sapiens

<400> 45
Arg Gly Ser Lys Asp Arg Asn Ser Gly Gln Gly Ser Gly Ser Tyr Gly
1   5   10   15

Gln Leu Ser Cys Arg Gly Phe Ser Asp Gln Phe Ser Arg Val Cys Thr
        20   25   30

Pro Pro Leu Trp Ala Gly Glu Pro Gly Pro Gly Leu Arg Arg Leu Gln
     35   40   45

Ala Leu Ala Asp Val Ala Leu His Asn Asn Gly Asn Glu Lys Val Thr
     50   55   60

Pro Tyr Val Arg
65

<210> 46
<211> 87
<212> PRT
<213> Homo sapiens

<400> 46

```
Asp Tyr Val Val Ser Leu Arg Lys Lys Phe Val Trp Gly Leu Trp Ala
1               5                   10                  15

Val Asn Ala Leu Gly Thr Ile Trp Lys Thr Gly Ser Cys Pro Gln Phe
            20              25                  30

Leu Pro Lys Leu Asp Ser Leu Ser Gly Cys Pro Lys Ser Leu Ile Pro
        35              40                  45

Gly Pro Ala Ser Pro Thr Pro Val Thr Pro Pro Pro Ala Pro Gly Pro
        50              55                  60

Ser Leu His Pro Arg Ser Pro Pro Ser Gly Ala His Pro Pro Pro Glu
65                  70              75                  80

Asn Ser Arg Arg Ala Ala Arg
                    85
```

<210> 47
<211> 51
<212> PRT
<213> Homo sapiens

<400> 47

```
Gln Ala Leu Glu Ser Gly Phe Trp Asp Thr Pro Lys Val Ser Pro Thr
1               5                   10                  15

Trp Gly Glu Thr Glu Gly Ser Ser Gln Phe Ser Ile Leu Phe Pro Thr
            20                  25                  30

His Ser Leu Pro Thr Val Pro Thr Gln Thr Ser Phe Ala Gly Ser Gln
        35                  40                  45

His Ser Pro
        50
```

<210> 48
<211> 20
<212> PRT
<213> Homo sapiens

<400> 48

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Arg Arg Ile Thr Tyr Lys Trp Arg Arg Ser Arg Ser Pro Lys Ala Lys
1               5                   10                  15

Leu Gln Glu Gly
            20
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<210> 49
<211> 36
<212> PRT
<213> Homo sapiens

<400> 49
Gly Glu Ser Leu Ile Asn Gly Ala Glu Ala Gly Ala Arg Arg Leu Asn
1   5   10   15

Cys Arg Arg Gly Glu Arg Met Leu Cys Phe His Gly Pro Leu Thr Leu
            20   25   30

Met Arg Gln Ser
        35

<210> 50
<211> 26
<212> PRT
<213> Homo sapiens

<400> 50
Lys His Ser Ile Arg Ser Pro Leu Leu Gln Phe Ser Leu Arg Ala Pro
1   5   10   15

Ala Ser Ala Pro Phe Ile Ser Asp Ser Pro
            20   25

<210> 51
<211> 25
<212> PRT
<213> Homo sapiens

<400> 51
Glu Ala His Glu Ser Thr Ala Phe Ala His Pro Ser Cys Asn Leu Ala
1   5   10   15

Phe Gly Leu Leu Leu Arg Arg His Leu
            20   25

<210> 52
<211> 3665
<212> DNA
<213> Homo sapiens

<400> 52
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aaagacattt taaacataat gatgcaactt ggtgtgcact acagcaaatg tacaggtgtt 300
ttttttttaa ttgtttccaa aaccgggacc tggatttaag atgtaatttt taaaatttct 360
atttctattt tttctgcagc agttgggtta gaggaggagg agccttttag cctctcataa 420
actgacctct ctacttcctc gtgtattttt aagattgatt gatgatgtgg aaagggcttt 480
gcttgtctgc tactgaaaac tttatcctgc ggttttgtg gaaactgctt ttggaaagag 540
aaaagaaatg aactttactg acttgacatt tttgcacctc ccgttttct aatctgggct 600

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attttttattt ttgttttttt acagtgagat ttttttgatc ttcagcttac attttcgggc 660
tttgtgagga aacctttacc catcaaacac gatggccagc aacgttacca acaagacaga 720
tcctcgctcc atgaactccc gtgtattcat tgggaatctc aacactcttg tggtcaagaa 780
atctgatgtg gaggcaatct tttcgaagta tggcaaaatt gtgggctgct ctgttcataa 840
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acaagcagta gagatgaaga atgataagtc agaagaggag cagagcagca gctccgtgaa 1380
gaaagatgag actaatgtga agatggagtc tgaggggggt gcagatgact ctgctgagga 1440
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caaggatgat gaaaaagagg ctgaggaagg agaggatgac agagacaagg ccaatggcga 1560
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gttgctatgg tttcatagca tgcggcactg ccccttttt catcccactc attacaggca 3120
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agaaagaat gaagaggctg aagtatgaac tacccttgga gcccatatac atgatatagg 3240
caatttcttt tgtatgttaa ttcagtcaaa aatactaccc acttgatgtt ttctaatctg 3300
atgtgagctc atgttacaca gacttttagt aagtaacccg tgactagaaa ataaactgga 3360
tgcttaggag agagtgtcag atgtataaga tgctaataaa acctgtttaa tattattgtt 3420
agctgtaagt ttttgggaaa tactgaacaa attagtccac aatcaagtgt ctacttttcc 3480
cttcactgta gggcctctcc ctgcacagag cagtctgttt agctgtgaac accacaatct 3540
gcagatgttc aagtccctta cataaaatgg catagtattt atatgtaacc tatgcatatt 3600
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aaaaa                                                          3665
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<210> 53
<211> 301
<212> PRT
<213> Homo sapiens

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<400> 53
Gly Asn Leu Tyr Pro Ser Asn Thr Met Ala Ser Asn Val Thr Asn Lys
1               5                   10                  15

Thr Asp Pro Arg Ser Met Asn Ser Arg Val Phe Ile Gly Asn Leu Asn
            20              25                  30

Thr Leu Val Val Lys Lys Ser Asp Val Glu Ala Ile Phe Ser Lys Tyr
        35              40                  45

Gly Lys Ile Val Gly Cys Ser Val His Lys Gly Phe Ala Phe Val Gln
    50              55              60

Tyr Val Asn Glu Arg Asn Ala Arg Ala Ala Val Ala Gly Glu Asp Gly
65              70                  75                  80

Arg Met Ile Ala Gly Gln Val Leu Asp Ile Asn Leu Ala Ala Glu Pro
            85                  90                  95

Lys Val Asn Arg Gly Lys Ala Gly Val Lys Arg Ser Ala Ala Glu Met
            100             105             110

Tyr Gly Ser Ser Phe Asp Leu Asp Tyr Asp Phe Gln Arg Asp Tyr Tyr
    115                 120                 125

Asp Arg Met Tyr Ser Tyr Pro Ala Arg Val Pro Pro Pro Pro Ile
    130             135                 140

Ala Arg Ala Val Val Pro Ser Lys Arg Gln Arg Val Ser Gly Asn Thr
145             150                 155                 160

Ser Arg Arg Gly Lys Ser Gly Phe Asn Ser Lys Ser Gly Gln Arg Gly
            165                 170                 175

Ser Ser Lys Ser Gly Lys Leu Lys Gly Asp Asp Leu Gln Ala Ile Lys
            180                 185                 190

Lys Glu Leu Thr Gln Ile Lys Gln Lys Val Asp Ser Leu Leu Glu Asn
    195                 200                 205

Leu Glu Lys Ile Glu Lys Glu Gln Ser Lys Gln Ala Val Glu Met Lys
    210                 215                 220

Asn Asp Lys Ser Glu Glu Glu Gln Ser Ser Ser Ser Val Lys Lys Asp
225                 230                 235                 240

Glu Thr Asn Val Lys Met Glu Ser Glu Gly Gly Ala Asp Asp Ser Ala
            245                 250                 255

Glu Glu Gly Asp Leu Leu Asp Asp Asp Asn Glu Asp Arg Gly Asp
            260                 265                 270

Asp Gln Leu Glu Leu Ile Lys Asp Asp Glu Lys Glu Ala Glu Glu Gly
    275                 280                 285

Glu Asp Asp Arg Asp Lys Ala Asn Gly Glu Asp Asp Ser
    290                 295                 300
```

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<210> 54
<211> 112
<212> PRT
<213> Homo sapiens

<400> 54
Glu Ser Ser Ser Pro Leu Ala Leu Ser Leu Ser Ser Ser Pro Ser Ser
  1               5                  10                  15

Ala Ser Phe Ser Ser Ser Leu Ile Asn Ser Ser Trp Ser Ser Pro Arg
               20                  25                  30

Ser Ser Leu Ser Ser Ser Ser Ser Arg Ser Pro Ser Ser Ala Glu Ser
           35                  40                  45

Ser Ala Pro Pro Ser Asp Ser Ile Phe Thr Leu Val Ser Ser Phe Phe
       50                  55                  60

Thr Glu Leu Leu Leu Cys Ser Ser Ser Asp Leu Ser Phe Phe Ile Ser
 65                  70                  75                  80

Thr Ala Cys Leu Leu Cys Ser Phe Ser Ile Phe Ser Arg Phe Ser Arg
               85                  90                  95

Arg Glu Ser Thr Phe Cys Phe Ile Trp Val Ser Ser Phe Leu Met Ala
           100                 105                 110
```

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<210> 55
<211> 107
<212> PRT
<213> Homo sapiens

<400> 55
Thr Arg Asn Leu Glu Lys Lys Lys Lys Asn Phe Leu Phe Leu Tyr
  1               5                  10                  15

Phe Ile Ile Val Tyr Phe Lys Leu Cys Phe Thr Ala Ser Ser Thr Lys
               20                  25                  30

Pro Leu Glu Cys Thr Arg Tyr Ile Phe Leu Gly Val Ile Ile Met Met
           35                  40                  45

His Thr Asn Thr Thr Leu Leu Lys Leu Tyr Phe Ile Glu Met His Val
       50                  55                  60

Ala Leu Arg Ser Gln Leu Asp Ile Glu Trp Arg Leu Phe Gln Asn Gly
 65                  70                  75                  80

Phe Tyr Ile Leu Met Lys Val Trp Glu Val Tyr Pro Leu Cys Leu Phe
               85                  90                  95

Ile Ser Ala Leu Trp Ser Ser Trp His Pro Phe
           100                 105
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<210> 56
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Partial cDNA
      sequence e.g., EST or contig. S

<400> 56
gcctcaagtt atc                                                      13


<210> 57
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Consensus
      sequence C

<400> 57
atgtcctagc ctcaagttat cagatgcaa                                     29
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